

EDITORIAL

Masks in surgery?

Early studies in the 1940s demonstrated that few organisms were dispersed from the respiratory tract during talking and that *Staphylococcus aureus* was mainly disseminated on clothing rather than directly from the nose.^{1,2} Later studies showed that certain nasal carriers were heavy dispersers of *S. aureus* and the organisms were shed mainly on skin scales.^{3,4} Heavy nasal carriers contaminate the skin of the face, the hair and fingers.⁵ Blowers and his colleagues showed that perineal carriers shed more organisms than nasal carriers and that dispersal could be considerably reduced by wearing tightly fitting rubber trunks.⁶ These studies provide indirect evidence that wearing a mask would be unlikely to prevent the transmission of *S. aureus* from a carrier to an operation site. A mask may even increase the dispersal of skin scales from the face by rubbing against the skin.⁷

Gillespie *et al.* in 1959⁸ reported that strains of *S. aureus* in the noses of ward staff were usually different, both in antibiotic resistance and phage type, from staphylococci isolated from wounds with a ward-acquired infection. The wearing of masks for dressing wounds was discontinued with no evidence of an increased infection rate. Although no controlled trials were carried out, it is now generally accepted that the wearing of masks for ward procedures is unnecessary.⁹ However, most surgeons have continued to wear masks in the theatre, arguing that open wounds are exposed for a much longer period during an operation than in the wards.

In this issue, a small 'mock up' study by Mitchell and Hunt confirms that few organisms are dispersed from the nose and mouth during normal breathing and talking, and they show that none were detected close to an operating table in a theatre with forced ventilation over the table. They conclude that wearing a mask in a theatre used for general surgery and with the ventilation system described, is an unnecessary ritual.

Many surgeons would agree with this, but good clinical evidence is generally lacking. A study by Orr compared infection rates over a six-month period in which masks were not worn with similar periods in previous years in which masks were worn in the theatre.¹⁰ Approximately 1000 operations were included in each of the study periods consisting mainly of cholecystectomies, bowel resections, thyroidectomies and herniorrhaphies; endoscopies were excluded. The infection rates were 5.4%, 4.2%, 4.5% and 3.7% in the previous periods and 1.8% in the period in which no masks were worn. The eight infections in the latter period were all caused by Gram-negative bacilli. The results are convincing but the length of

postoperative stay which might influence the number of infections recorded was not included and the study was not controlled.

A larger controlled study of infection rates in clean wounds would be desirable, but expensive. However, it might be possible to obtain confirmatory information on infection rates from surgeons who have already discontinued wearing masks for operating. The controversial topic of the necessity to wear masks to protect the surgeon from blood splashes will not be discussed in this article, but the evidence available suggests that the mask does little to protect the patient from acquiring staphylococcal wound infection from the surgical team.

G. A. J. Ayliffe

*Hospital Infection Research Laboratory
Dudley Road Hospital
Dudley Road
Birmingham B18 7QH*

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